Pacific Northwest National Laboratory Environmental Management Performance Report

November 2000

PREPARED FOR THE U.S. DEPARTMENT OF ENERGY, RICHLAND OPERATIONS OFFICE
OFFICE OF ENVIRONMENTAL MANAGEMENT

Pacific Northwest National Laboratory
Operated for the U.S. Department of Energy
by Battelle Memorial Institute

Table of Contents

This document provides the Department of Energy Richland Operations Office (DOE-RL) with a report of the Pacific Northwest National Laboratory (PNNL) performance by Battelle Memorial Institute and its subcontractors.

In Section A, the Executive Summary, text and graphics report the safety metrics status for all PNNL activities. Senior management's overall performance assessment of all Environmental Management activities conducted at PNNL is presented in a stoplight chart.

Section B, Project Performance Summary, provides a brief summary of the month's performance for the PNNL lead activity, PNNL Waste Management (PBS RL-ST01). More detailed information can be found within PNNL-7911-108a, PNNL's Project Status Report for September 2000. Summary analyses pertaining to PNNL's support to other Project Baseline Summaries (PBSs) are addressed in the contractor's report having lead responsibility for that scope.

Unless otherwise noted, information in this report is current as of September 30, 2000.

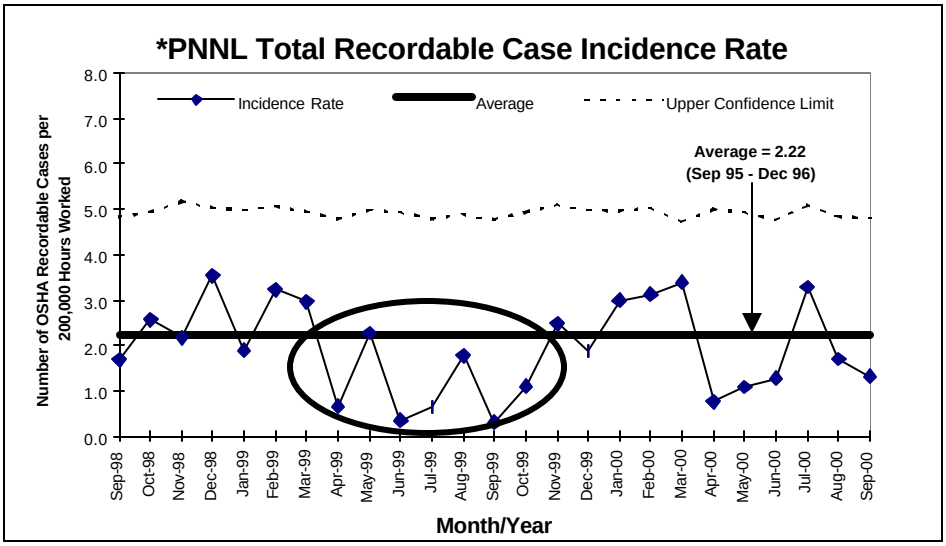
This section provides an executive-level summary of performance information and is intended to bring to management's attention that information considered to be most noteworthy. The section begins with overview of safety, a summary of FY 2000 performance, a summary of Fiscal Year (FY) 2000 Voluntary Protection Program (VPP) activities, followed by a stoplight chart on overall performance.

Safety Overview

The focus of this section is on documenting trends in work-related injury and illness rates. The rates are presented graphically in this section and are tracked for significant changes. Current efforts to improve performance are being made through the continued implementation of the Integrated Environment, Safety and Health Maintenance System (ISMS), and the development and implementation of the Voluntary Protection Program (VPP).

Summary of Fiscal Year 2000 Performance

The three FY 2000 performance indicators for injury and illness statistics were met this year with rates below the goals (lab upper limits) for Total Recordable Case Incidence Rate, Lost Workday Case Incidence Rate, and Lost Workday Incidence Rate (Severity Rate). The specific year end rates and goals (Lab Upper Limit) are noted in the text blocks associated with each of the following graphs:

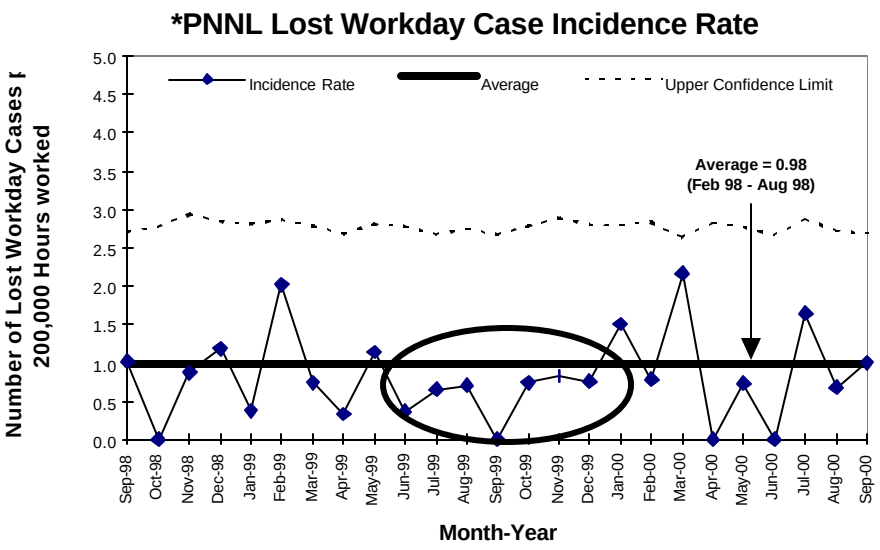


FY 00Rate Overview:
Cumulative To Date =2.0
Lab Upper Limit ≤ 2.3

This indicator has been generally stable over the long term. There was a decrease in the rates during the period of April 99 - October 99 followed by a return back to an expected randomly fluctuating pattern within the anticipated control limits.

Green

*Includes all Pacific Northwest National Laboratory Operations.

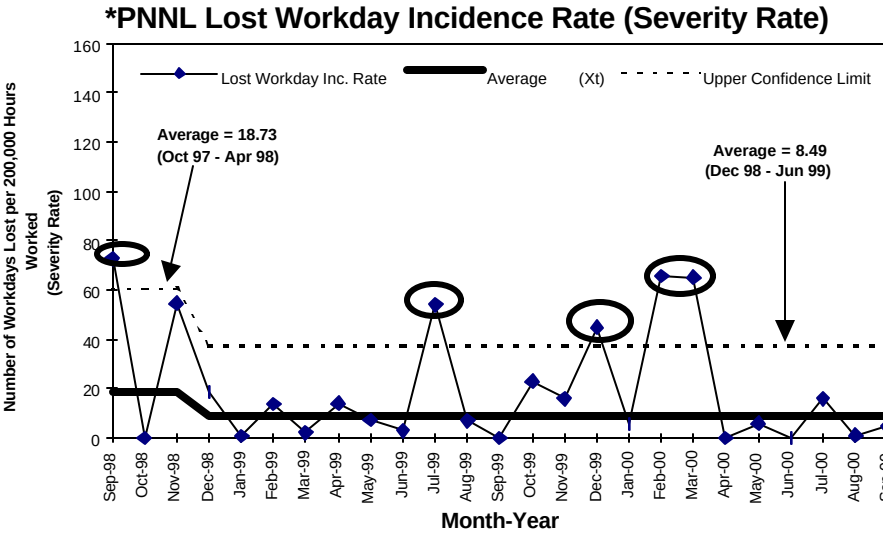


FY 00Rate Overview:
Cumulative To Date = .9
Lab Upper Limit ≤ 1.2

This indicator has been generally stable over the long term. There was a temporary short-term decrease during the period of June 99 - December 99 followed by a return back to an expected randomly fluctuating pattern within the anticipated control limits.

Green

*Includes all Pacific Northwest National Laboratory Operations.



FY 00Rate Overview:
Cumulative To Date = 20.7
Lab Upper Limit ≤ 30.0

The data for the last six months have been randomly cycling within the normal anticipated control limits. Past months that are above the upper control limit with cases currently accumulating lost workdays are February 00 and March 00.

Green

*Includes all Pacific National Laboratory Operations.

Summary of Fiscal Year 2000 VPP Activities

Employee Participation

Nine PNNL staff members represented PNNL at the VPP Region X conference in May in Seattle.

Ten PNNL staff members represented PNNL at the VPP national conference in August in Seattle.

Staff Awareness Campaign

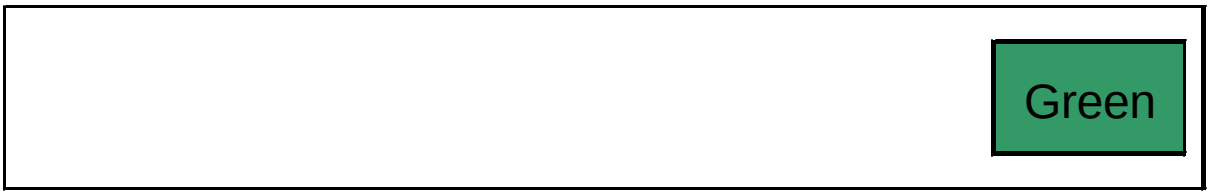
The VPP Steering Committee distributed an informational brochure that addressed five basic questions on VPP. Shortly after the brochure was sent out, staff received an electronic survey containing the five basic questions. Close to 2,000 staff members responded to the survey and received a safety award.

VPP Application for STAR Status

PNNL is the first organization to be submitting their VPP application via web site. DOE Richland Operations Office staff are currently reviewing this site, and DOE-Headquarters staff will review this site in November 2000. Access issues are currently being worked so that the external reviewers can access the site.

Cost/Schedule Performance Stoplight

The following rating reflects overall cost and schedule performance for activities conducted by PNNL. *(Narrative not required when rating is green.)*



Green:	Satisfactory
Yellow:	Significant improvement required
Red:	Unsatisfactory

This section provides cost and schedule performance, any significant issues, upcoming baseline change requests for the period covered, and Fiscal Year (FY) 2000 accomplishments. In FY 2000, Battelle Memorial Institute has lead responsibility over PBS RL-ST01, PNNL Waste Management WBS 1.7.1.

Mission

WBS 1.7.1 provides PNNL with waste management services and compliant operations in support of science and technology development for the multiprogram needs of the U.S. Department of Energy (DOE) Complex. These services include:

- essential surveillance and maintenance of DOE laboratory facilities assigned to PNNL for safe containment of radioactive and hazardous materials
- infrastructure required to manage wastes and effluents currently generated at the PNNL
- operational compliance services to meet regulatory requirements and operating permits including environment, safety, and health regulations
- management of legacy wastes and contamination remaining from past PNNL research operations.

Performance Data and Analysis

As of September 30, 2000 the cumulative costs are $13.9 million with a positive cost variance of $0.7M and a cumulative schedule variance of negative $0.2M. Though cost and schedule variances are within 10% reporting threshold, a brief explanation of the primary activities that were not completed this fiscal year are described following the tables and chart.

Cost Performance ($M):			
	BCWP	**ACWP**	**Variance**
PNNL Waste Management	$14.6	$13.9	$0.7
Schedule Performance ($M):			
	BCWP	**BCWS**	**Variance**
PNNL Waste Management	$14.6	$14.9	($0.2)

FY 2000 Cost/Schedule Performance - All Fund Types

Cumulative to Date Status - ($000)

WBS	PBS	BCWS	BCWP	ACWP	CV	%	SV	%
1.7.1	RL-ST01	$14,870	$14,628	$13,888*	$739	5	$(242)	-2

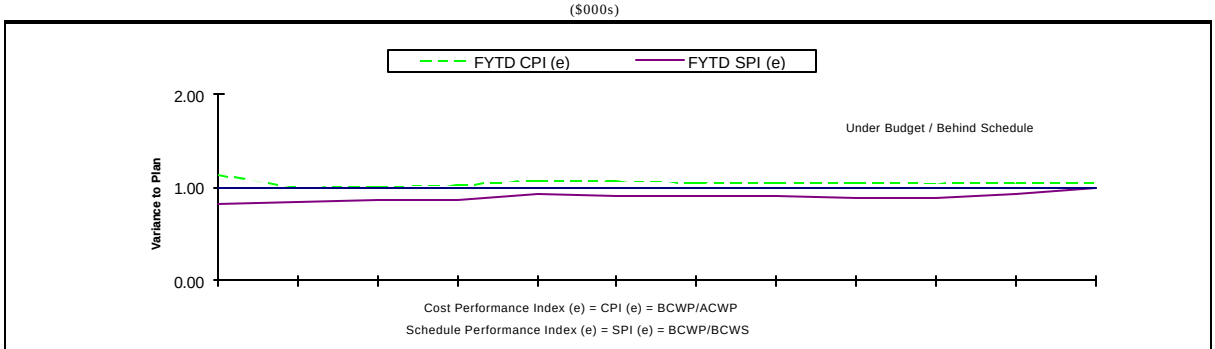
Total	$14,870	$14,628	$13,888*	$739	5	$(242)	-2

* Numbers reflect PNNL only; $127K expended by Fluor for S&M of 242B/BL bringing actuals to $14,015K.

Cost / Schedule Performance Indices

FY 2000 Cum to Date Status

($000s)



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	TOTAL
Monthly BCWS	1227	976	1027	1311	1183	1331	1500	1322	1294	1462	840	1397	14870
Monthly BCWP	1000	869	941	1165	1297	1191	1353	1137	989	1259	1438	1989	14628
Monthly ACWP	879	1004	903	1111	1000	1186	1342	1168	936	1251	1222	1886	13888
Monthly CPI (e)	1.14	0.87	1.04	1.05	1.30	1.00	1.01	0.97	1.06	1.01	1.18	1.05	
Monthly SPI (e)	0.82	0.89	0.92	0.89	1.10	0.89	0.90	0.86	0.76	0.86	1.71	1.42	
FYTD BCWS	1227	2203	3230	4542	5725	7056	8555	9877	11171	12633	13472	14870	
FYTD BCWP	1000	1869	2810	3975	5272	6462	7815	8952	9942	11200	12638	14628	
FYTD ACWP	879	1883	2786	3897	4897	6083	7425	8593	9529	10780	12002	13888	
FYTD CPI (e)	1.14	0.99	1.01	1.02	1.08	1.06	1.05	1.04	1.04	1.04	1.05	1.05	
FYTD SPI (e)	0.82	0.85	0.87	0.88	0.92	0.92	0.91	0.91	0.89	0.89	0.94	0.98	

The positive cost variance of $0.7M results from reduced overhead rates and efficiencies. A change request was approved on October 2 to replace/upgrade the heating, ventilation, and air conditioning (HVAC) system within Radiochemical Processing Laboratory (RPL) using programmatic underruns. A baseline change request is in process to redirect the remaining program underrun to replacement of RPL's electrical switchgear. The reliability of the switchgear is crucial for maintaining the facility safety envelop in the RPL according to the SAR.

The cumulative schedule variance is within reporting thresholds. The primary activities making up the year-end negative schedule variance are as follows:

- Difficulties were encountered completing the final details in the High Dose Solid Waste container design as well as a late start in fabrication of the drums. As a result of this delay the drum shipping dates for the 73 cans of transuranic (TRU)/low-level waste (LLW) is expected to occur in early FY 2001. Concerted efforts are being made to streamline the fabrication process and set priorities for which type of drums need to be available first.

- Four events delayed the cleanout of the RPL 604 glovebox 1) shutdown of the area because of the range fire, 2) unplanned shutdown of the LAI, 3) three glove change outs, and 4) high-efficiency particulate air (HEPA) filter replacement. All but one of the liquid samples from the eight columns with liquids in them was found to have a very high activity count, which made analysis more difficult. In order to handle the samples in the fume hoods, extensive dilution or chemical separation of the silver was required on all but one of the samples. The dilution

required would make it impossible to meet the required detection levels. On September 7, 2000 a routine Dioctyl-sebacate (DOS) test of the HEPA filter on the exhaust line from the glovebox failed, indicating a hole or leakage past the filter. Under these conditions, no work is allowed in the glovebox until the filter is replaced. Normally a routine activity, a new radiation work permit (RWP) had to be generated and a new bioassay requirement had to be satisfied. Liquids and the resins will be removed from the columns and tanks and put in plastic containers, ready for bag-out. These plastic containers are not suitable for long-term storage in a radioactive environment. Therefore, funding must be continued into next FY so that these materials will not be left in an unsafe condition.

- Remaining work with the 6652H Radiological Contamination facility includes disposal of fluorescent lights from the growth chamber; removal of construction support equipment; completion of the final release survey; and excess of salvaged equipment. The waste is currently at a subcontractor for size reduction.

- The integrity assessment of the radioactive liquid waste tank (RLWT)-piping is currently on hold with no defined completion date. The integrity assessment was delayed because the 204-AR Facility (receiver facility) is not ready, and Pacific Northwest did not want to add any liquids to the tank to make it a radiologically controlled tank until the receiver facility is ready. The earliest the 204-AR Facility will receive waste via the LR-56 Truck is FY 2001.

Four FY 2000 change requests were approved either deferring or adding scope to FY 2001 baseline using FY 2000 funds.

- PWM2000-009, "High Dose Waste and 604 Glovebox Schedule Revisions, RL Milestone Delays," deferred $139K of legacy waste disposal scope into FY 2000. (Approved 8/28/00)

- PWM2000-013, "Adjust Project Baseline to Reflect Basis of Estimate Revision and Deferral of Activities into FY 2001," deferred $165.3K of scope associated with liquid waste disposal using radioactive liquid waste system (RLWS). (Approved 10/2/00)

- PWM2000-014, "Scope Deferral from FY 2000 to FY 2001," deferred $34.2K of scope to conduct air emissions inventory and air compliance inspections for six Research and Development (R&D) laboratories into FY 2001. (Approved 10/2/00)

- PWM2000-016, "HVAC Controller Replacement/Upgrade," added $335K of scope in FY 2001. (Approved 10/2/00)

Top Five Accomplishments for FY 2000

The following reflect the top five (5) accomplishments of the Waste Management & Operational Compliance Program in FY 2000.

(Categories are as follows:

Momentum – How in terms of waste processing rates, etc. the cleanup of Hanford has been "*sped up*".
Progress – What "*things*" have been achieved this year in terms of amounts and percentages.
Completion & Removal – What's done and what's gone.)

Completed demolition of the 331A Building under Comprehensive Environmental Response, Compensation, and Liability Act CERCLA process (Completion and Removal).

Completed cleanout of 9,000 gallons of potentially radioactive material contained in the 331 Building Animal Waste Septic Tanks (Completion and Removal).

Completed implementation of the FY 1999 and FY 2000 updates to the RPL Safety Analysis Report (SAR) in order to maintain the facility safety envelope (Progress).

Increased amount of waste processed through the Hazardous Waste Treatment Unit (HWTU) more than ten times previous years (3,174 kgs treated vs. 309 kgs in last two FYs) (Momentum).

Twenty-six (26) metric tons (MT) of hazardous (HAZ), 64 m^3 of LLW, 12 m^3 of low-level mixed waste (LLMW), and 1 m^3 of TRU currently generated wastes shipped for storage or disposal (Progress).

Additional FY 2000 Accomplishments

Progress -

Significant progress was achieved in integrating environmental compliance activities throughout all environmental management services provided to the Laboratory.

A $19K investment in three Pollution Prevention (P2) projects generated from a 5% P2 fee will result in annual savings of $26,067 to the Laboratory.

Successfully obtained required approvals from regulators to allow continued compliant laboratory operations

Completed 15,701 radiological surveys and 178 preventive maintenance checks and routines; collected and counted 6,206 air samples; conducted 702 nuclear material inspections; supervised 10,257 access entries into radiological control areas within the RPL

Completed 77 individual routine surveillance & maintenance (S&M) inspections on 30 excess facilities assigned to PNNL

Submitted Multi-Year Work Plan (MYWP) deliverables on schedule and provided timely support for the proposed restructure of the Hanford Work Breakdown Structure (WBS).

Completion -

Suggested improvements from the FY 1999 self-assessment survey were implemented.

Positive feedback was received from the FY 2000 Independent Cost Estimate review of the program conducted by the US Army Corps of Engineers.